



SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: FitzGerald, David
Pastan, Ira
Mansfield, Elizabeth
Kreitman, Robert
- (ii) TITLE OF INVENTION: Recombinant Antibodies and
Immunoconjugates Targeted to CD-22 Bearing Cells and
Tumors
- (iii) NUMBER OF SEQUENCES: 15
- (iv) CORRESPONDENCE ADDRESS:
(A) ADDRESSEE: Townsend and Townsend and Crew LLP
(B) STREET: Two Embarcadero Center, Eighth Floor
(C) CITY: San Francisco
(D) STATE: California
(E) COUNTRY: USA
(F) ZIP: 94111-3834
- (v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:
(A) APPLICATION NUMBER: US 09/381,497
(B) FILING DATE: 20-SEP-1999
(C) CLASSIFICATION:
B3
- (vii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: WO PCT/US98/05453
(B) FILING DATE: 19-MAR-1998
- (viii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: US 60/041,437
(B) FILING DATE: 20-MAR-1997
- (ix) ATTORNEY/AGENT INFORMATION:
(A) NAME: Weber, Ellen Lauver
(B) REGISTRATION NUMBER: 32,762
(C) REFERENCE/DOCKET NUMBER: 015280-317100US
- (x) TELECOMMUNICATION INFORMATION:
(A) TELEPHONE: (415) 576-0200
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(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 369 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..369
- (D) OTHER INFORMATION: /product= "RFB4 heavy chain"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GAA GTG CAG CTG GTG GAG TCT GGG GGA GGC TTA GTG AAG CCT GGA GGG Glu Val Gln Leu Val Glu Ser Gly Gly Leu Val Lys Pro Gly Gly	48
1 5 10 15	
TCC CTG AAA CTC TCC TGT GCA GCC TCT GGA TTC GCT TTC AGT ATC TAT Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Ile Tyr	96
20 25 30	
GAC ATG TCT TGG GTT CGC CAG ACT CCG GAG AAG AGG CTG GAG TGG GTC Asp Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp Val	144
35 40 45	
GCA TAC ATT AGT AGT GGT GGT ACC ACC TAC TAT CCA GAC ACT GTG Ala Tyr Ile Ser Ser Gly Gly Thr Thr Tyr Tyr Pro Asp Thr Val	192
50 55 60	
AAG GGC CGA TTC ACC ATC TCC AGA GAC AAT GCC AAG AAC ACC CTG TAC Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr	240
65 70 75 80	
CTG CAA ATG AGC AGT CTG AAG TCT GAG GAC ACA GCC ATG TAT TAC TGT Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met Tyr Tyr Cys	288
85 90 95	
GCA AGA CAT AGT GGC TAC GGT AGT AGC TAC GGG GTT TTG TTT GCT TAC Ala Arg His Ser Gly Tyr Gly Ser Ser Tyr Gly Val Leu Phe Ala Tyr	336
100 105 110	
TGG GGC CAA GGG ACT CTG GTC ACT GTC TCT GCA Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala	369
115 120	

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(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 123 amino acids
- (B) TYPE: amino acid
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Glu Val Gln Leu Val Glu Ser Gly Gly Leu Val Lys Pro Gly Gly 1 5 10 15	
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Ile Tyr 20 25 30	

Asp	Met	Ser	Trp	Val	Arg	Gln	Thr	Pro	Glu	Lys	Arg	Leu	Glu	Trp	Val
			35				40					45			
Ala	Tyr	Ile	Ser	Ser	Gly	Gly	Gly	Thr	Thr	Tyr	Tyr	Pro	Asp	Thr	Val
			50				55				60				
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn	Thr	Leu	Tyr
					65		70				75				80
Leu	Gln	Met	Ser	Ser	Leu	Lys	Ser	Glu	Asp	Thr	Ala	Met	Tyr	Tyr	Cys
					85				90						95
Ala	Arg	His	Ser	Gly	Tyr	Gly	Ser	Ser	Tyr	Gly	Val	Leu	Phe	Ala	Tyr
					100				105						110
Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ala					
					115				120						

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 321 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: DNA
 - (ix) FEATURE:
 - (A) NAME/KEY: CDS
 - (B) LOCATION: 1..321
 - (D) OTHER INFORMATION: /product= "RFB4 light chain"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GAT	ATC	CAG	ATG	ACC	CAG	ACT	ACA	TCC	TCC	CTG	TCT	GCC	TCT	CTG	GGA	48
Asp	Ile	Gln	Met	Thr	Gln	Thr	Thr	Ser	Ser	Leu	Ser	Ala	Ser	Leu	Gly	
1				5					10					15		
GAC	AGA	GTC	ACC	ATT	AGT	TGC	AGG	GCA	AGT	CAG	GAC	ATT	AGC	AAT	TAT	96
Asp	Arg	Val	Thr	Ile	Ser	Cys	Arg	Ala	Ser	Gln	Asp	Ile	Ser	Asn	Tyr	
				20					25					30		
TTA	AAC	TGG	TAT	CAG	CAG	AAA	CCA	GAT	GGA	ACT	GTT	AAA	CTC	CTG	ATC	144
Leu	Asn	Trp	Tyr	Gln	Gln	Lys	Pro	Asp	Gly	Thr	Val	Lys	Leu	Leu	Ile	
				35				40				45				
TAC	TAC	ACA	TCA	ATA	TTA	CAC	TCA	GGA	GTC	CCA	TCA	AAG	TTC	AGT	GGC	192
Tyr	Tyr	Thr	Ser	Ile	Leu	His	Ser	Gly	Val	Pro	Ser	Lys	Phe	Ser	Gly	
				50				55			60					
AGT	GGG	TCT	GGA	ACA	GAT	TAT	TCT	CTC	ACC	ATT	AGC	AAC	CTG	GAG	CAA	240
Ser	Gly	Ser	Gly	Thr	Asp	Tyr	Ser	Leu	Thr	Ile	Ser	Asn	Leu	Glu	Gln	
				65				70			75			80		
GAA	GAT	TTT	GCC	ACT	TAC	TTT	TGC	CAA	CAG	GGT	AAT	ACG	CTT	CCG	TGG	288
Glu	Asp	Phe	Ala	Thr	Tyr	Phe	Cys	Gln	Gln	Gly	Asn	Thr	Leu	Pro	Trp	
				85				90				95				

ACG TTC GGT GGA GGC ACC AAG CTG GAA ATC AAA
 Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

321

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 107 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly
 1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile
 35 40 45

Tyr Tyr Thr Ser Ile Leu His Ser Gly Val Pro Ser Lys Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp
 85 90 95

b3
b4t
 Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 4 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS:
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Gly Gly Gly Ser
 1

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 33 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..33
- (D) OTHER INFORMATION: /note= "RFB4 VH5 heavy chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

GGACCTCATA TGGAAGTGCA GCTGGTGGAG TCT

33

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 24 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

B³
(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..24
- (D) OTHER INFORMATION: /note= "gamma-CH1 heavy chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

AGCAGATCCA GGGGCCAGTG GATA

24

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 54 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

B⁴
(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..54
- (D) OTHER INFORMATION: /note= "RFB4 VH3 heavy chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

AGATCCGCCA CCACCGGATC CGCCTCCGCC TGCAGAGACA GTGACCAGAG TCCC

54

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 27 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..27
- (D) OTHER INFORMATION: /note= "RFB4 VH3 dsFv heavy chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

CCGGAAGCTT TTGCAGAGAC AGTGACC

27

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 28 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

B3
(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..28
- (D) OTHER INFORMATION: /note= "RFB4 VH dsFv(cys) heavy chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

GACCCACTCC AGGCACTTCT CCGGAGTC

28

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 48 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..48
- (D) OTHER INFORMATION: /note= "RFB4 VL5 light chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

GGTGGCGGAT CTGGAGGTGG CGGAAGCGAT ATCCAGATGA CACAGACT

48

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..24
- (D) OTHER INFORMATION: /note= "C-kappa light chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

TGGTGGGAAG ATGGATACAG TTGG

24

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..25
- (D) OTHER INFORMATION: /note= "RFB4 VL3 light chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

CCGGAAGCTT TGATTTCCAG CTTGG

25

(2) INFORMATION FOR SEQ ID NO:14:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 28 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..28
- (D) OTHER INFORMATION: /note= "RFB4 VL5 dsFv light chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GGACCTCATA TGGATATCCA GATGACCC

28

(2) INFORMATION FOR SEQ ID NO:15:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 48 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: -
- (B) LOCATION: 1..48
- (D) OTHER INFORMATION: /note= "RFB4 VL3 dsFv light chain primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

CCGGAATTCA TTATTTGATT TCCAGCTTGG TGCCGCAACC GAACGTCC

48